

AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions and listings of the claims in this application.

Listing of the Claims:

1. (Currently amended) A process ~~for separating a mixture~~ comprising
 - a) separating a monoolefinically unsaturated compound which is obtainable obtained by adding two terminal olefins, wherein each of the two olefins include at least one functional group which bear the functional groups required to prepare the monoolefinically unsaturated compound containing at least two functional groups, or a saturated compound obtained by hydrogenating ~~such a~~ the unsaturated compound, from a reaction mixture, the reaction mixture comprising;
 - b) ~~——a compound which is obtainable by adding more than two of the terminal olefins mentioned in a) or a compound obtained by hydrogenating such a~~ the unsaturated compound, or the saturated compound,and
 - e) ~~——a compound which contains a transition metal, wherein the metal compound is homogeneous with respect to the reaction mixture and is suitable as a catalyst for preparing a~~ the monoolefinically unsaturated compound by adding two terminal olefins which bear the functional groups required to prepare the monoolefinically unsaturated compound containing at least two functional groups,
~~by means of a semipermeable membrane to obtain~~
 - b) forming a permeate and a retentate in such a way that the by feeding the reaction mixture to a semipermeable membrane such that a weight ratio of component b) to component e) the unsaturated, or the saturated compound, to the metal compound in the mixture fed to the semipermeable membrane is smaller than in the retentate,
wherein the unsaturated or saturated compound ~~a) used is a compound~~ is selected from the group consisting of adipic diester, adiponitrile, 5-cyanovaleric ester, 1,4-butenedinitrile, 5-cyanopentenoic ester and hexenedioic diester, and

wherein the semipermeable membrane is an inorganic membrane with a mean average pore size of the membrane is in the range from 0.9 to 50 nm, in the case of inorganic membranes, or ~~wherein the semipermeable membrane is an organic membrane with a mean average separation limit of the membrane is in the range from 500 to 100000 daltons in the case of organic membranes.~~

2. (Currently amended) The process according to claim 1, wherein the ~~component e) used~~ metal compound is a rhodium-, ruthenium-, palladium- or nickel-containing compound.

3. (Currently amended) The process according to claim 1, wherein the ~~component e) used~~ metal compound is a rhodium-containing compound.

4. The process according to ~~any of claims 1 to 3, wherein the component e) used is a claim 3, wherein the~~ rhodium-comprising compound ~~which is homogeneous with respect to the mixture and~~ is of the formula $[L^1RhL^2L^3R]^+X^-$ where

L^1 is an anionic pentahapto ligand;

L^2 is an uncharged 2-electron donor;

L^3 is an uncharged 2-electron donor;

R is selected from the group consisting of H, C_1 - C_{10} -alkyl, C_6 - C_{10} -aryl and C_7 - C_{10} -aralkyl ligands;

X^- is an uncoordinating anion;

and where two or three of L^2 , L^3 and R are optionally joined.

5. (Original) The process according to claim 4, wherein L^1 is pentamethylcyclopentadienyl.

6. (Currently amended) The process according to ~~either of claims 4 and 5~~ claim 4, wherein X^- is selected from the group consisting of BF_4^- , $B(\text{perfluorophenyl})_4^-$, $B(3,5\text{-bis(trifluoromethyl)phenyl})_4^-$, $Al(OR^F)_4^-$ where R^F is ~~identical or different~~ part-fluorinated or perfluorinated aliphatic or aromatic radicals.

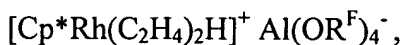
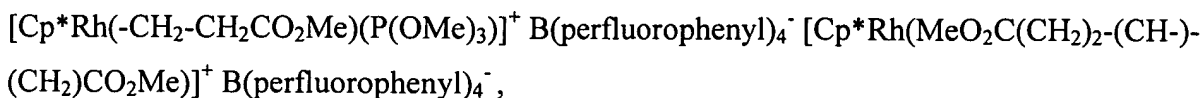
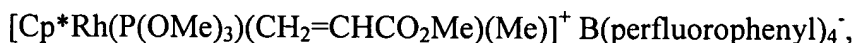
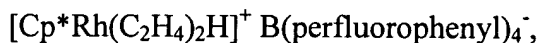
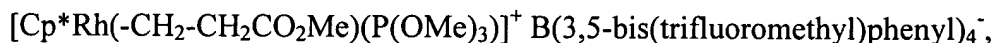
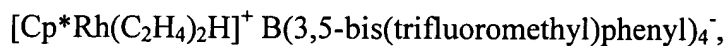
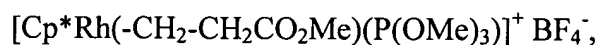
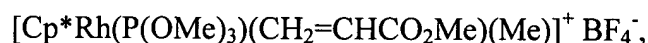
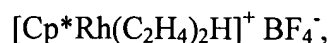
7. (Currently amended) The process according to ~~any of claims 4 to 6~~ claim 4, wherein L^2 and L^3 are each independently selected from the group consisting of C_2H_4 , $CH_2=CHCO_2Me$, $P(OMe)_3$ and $MeO_2C-(C_4H_6)-CO_2Me$.

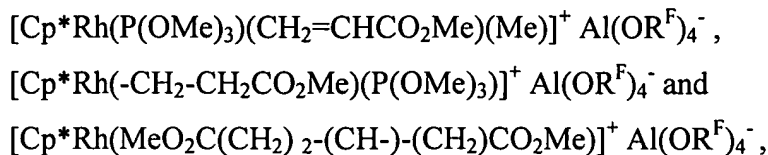
8. (Currently amended) The process according to ~~any of claims 4 to 6~~ claim 4, wherein L^2 and L^3 together are selected from the group consisting of acrylonitrile and 5-cyanopentenoic ester.

9. (Currently amended) The process according to ~~any of claims 4 to 7~~ claim 4, wherein L^2 and R together are $-CH_2-CH_2CO_2Me$.

10. (Currently amended) The process according to ~~any of claims 4 to 7 or 9~~ claim 4, wherein L^2 , L^3 and R together are $MeO_2C(CH_2)_2-(CH)-(CH_2)CO_2Me$.

11. (Currently amended) The process according to claim 3, wherein the ~~component e) used is a compound~~ metal compound is selected from the group consisting of





where R^F is ~~identical or different~~ part-fluorinated or perfluorinated aliphatic or aromatic radicals.

12. (Currently amended) The process according to ~~any of claims 1 to 11~~ claim 1, wherein a the membrane ~~which~~ comprises substantially one or more ~~organic or inorganic~~ materials.

13. (Currently amended) The process according to ~~any of claims 1 to 12~~ claim 1, wherein ~~the ratio of the~~ a pressure on the retentate side of the membrane relative to the a pressure on the permeate side of the membrane ~~is in the range~~ provides a pressure ratio of from 2 to 100.

14. (Currently amended) The process according to ~~any of claims 1 to 13~~ claim 1, wherein a the pressure ~~in the range from 0.1 to 10 MPa~~ is applied on the retentate side of the membrane is from 0.1 to 10 MPa.

15. (Currently amended) The process according to ~~any of claims 1 to 14~~ claim 1, wherein a the pressure ~~in the range from 1 to 1000 kPa~~ is applied on the permeate side of the membrane is from 1 to 1000 kPa.

16. (Currently amended) The process according to ~~any of claims 1 to 15~~ claim 1, wherein the membrane separation is ~~carried out~~ conducted at a temperature ~~in the range~~ from 0 to 150°C.

17. (New) The process according to claim 1, wherein the membrane comprises substantially one or more organic materials.